REMARKS

This application was filed with 43 claims. Claims 16-43 were previously withdrawn. Therefore, Claims 1-15 are still pending in the application. Claims 1-15 have been rejected. Claims 1-15 have been amended. Reconsideration of the application based on the remaining claims as amended and arguments submitted below is respectfully requested.

Claim Objections

Claim 1 has been objected to because the phrase "the dimming ballast" should be added before "comprising. Applicant has amended Claim 1 to provide this clarification by deleting the intervening text.

Claim Rejections - 35 U.S.C. § 112

The Examiner has rejected Claims 1-15 under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner has rejected Claim 1 because the Examiner believes that the phrase "A software controlled electronic dimming ballast" is unclear. According to the Examiner, "it is not clear how software is controlled by an electronic dimming ballast."

According to the Manual of Patent Examination Procedure (MPEP) §2173:

> The primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent. A secondary purpose is to provide a clear measure of what applicants regard as the invention so that it can be determined whether the claimed invention meets all the criteria for patentability and whether

the specification meets the criteria of **35 U.S.C. 112**, first paragraph with respect to the claimed invention.

Furthermore, according to MPEP §2173.02:

> Definiteness of claim language must be analyzed, not in a vacuum, but in light of:
>
> (A) The content of the particular application disclosure;
>
> (B) The teachings of the prior art; and
>
> (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.
>
> In reviewing a claim for compliance with 35 U.S.C. **112**, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. **112**, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. *See, e.g., Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000).

Applicant respectfully submits that the Examiner made an incorrect grammatical classification of the words in the statement. The word "software" is not being used as a noun and the word "controlled" is not being used as a verb. Instead, "software controlled" is being used as an adjective, meaning an electronic ballast that is "software controlled". Therefore, Applicant believes that no clarification is necessary. Nevertheless, Applicant has amended Claim 1 to delete the language "software controlled" from the preamble to the claim.

The Examiner also states that Claim 1 is indefinite because the claim is not limited to tangible embodiments. According to the Examiner, Claim 1 is limited to functional descriptive elements because the claim recites "A software" and "lamp dimming level control software". The Examiner cites several examples of software

included in tangible embodiments. First, as explained above, the preamble of Claim 1 is not stating that the invention is "A software". Instead, Claim 1 is directed towards a "software controlled" (adjective) "ballast" (noun). Also, the "lamp dimming level control software" is in a tangible medium because it is included in the "dimming control circuit". Moreover, Applicant has amended Claim 1 to include a "controller circuit" which, as part of the dimming control circuit, cooperates with the dimming control software to implement certain functions defined in the claims. One embodiment of a controller circuit is shown and described in the specification as microcontroller circuit 22.

The Examiner also rejects Claims 1-10 and Claim 13 because "the dimming control circuit" (hardware) includes lamp dimming level control software (software)." The Examiner is unnecessarily and implicitly requiring that a circuit only include other hardware components. However, there are many examples of electronic components that can include software. In fact, some of them are cited by the Examiner in paragraph 4 of the Office Action. For example, a computer readable storage medium (hardware) can include a software program (software). A memory device (hardware) can include a software program (software). One of ordinary skill in the art would understand that control circuits may include many different types of components that store software. For example, the control circuit may include a microprocessor having a storage medium that stores the software. Moreover, Applicant has amended Claim 1 to include a "controller circuit" which, as part of the dimming control circuit, cooperates with the dimming control software to

implement certain functions defined in the claims. One embodiment of a controller circuit is shown and described in the specification as microcontroller circuit 22.

The Examiner rejects Claim 10 because of the phrase "an input voltage feedback input for receiving an input voltage feedback signal representative of input voltage being supplied to the dimming ballast". According to the Examiner, it is not clear how an input receives another input signal. Applicant is having difficulty understanding what is unclear about this statement. The Examiner appears to be interpreting an "input" as another type of signal. This is clearly not the case. The "input" is a device or terminal in a dimming control circuit that receives the feedback signal. Further, Applicant has amended Claim 10 to positively state that the input voltage feedback input receives an input voltage feedback signal.

The Examiner also rejects Claim 10 because "[i]t is not clear how the 'input voltage feedback signal' indicates the 'input voltage' and the 'input voltage' is the input voltage of the 'input voltage feedback input' or the input voltage of the 'input voltage feedback signal'". As defined by Claim 10, the "input voltage" is the input voltage being supplied to the electronic ballast. The "input voltage feedback signal" is representative of this input voltage which allows the dimming control circuit to control the inverter. However, it is not the input of the input voltage feedback signal.

Applicant respectfully requests that the rejection of Claims 1-15 under § 112 be withdrawn.

Claim Rejections - 35 U.S.C. § 102(e)

Claims 1-15 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Vakil et al (U.S. Patent No. 7,042,170).

Vakil discloses an electronic ballast that utilizes digital data. However, Applicant respectfully disagrees with this rejection because Vakil does not disclose all of the limitations of Claim 1. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131 citing Verdegaal Bros. V. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the . . . claim." Id., citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Also, "[t]he elements must be arranged as required by the claim..." Id. citing In re Bond, 910 F.2d 831 (Fed. Cir. 1990).

Claim 1 as amended requires a dimming control circuit including a "controller circuit comprising lamp dimming level control software functional to cause the dimming control circuit to incrementally modulate the pulse width and frequency of the inverter control signal based on the dimming control signal and *the lamp dimming level feedback signal.*" (emphasis added) Paragraph 6 of the Office Action cites microprocessor 42 in Fig. 12, and the text in column 3, lines 53-63, and column 4, line 66 – column 5, line 26 of Vakil as disclosing the claimed dimming level control software. Although microprocessor 42 undoubtedly contains software and/or firmware, the software of Vakil does not cause the dimming control circuit to

regulate the pulse width and frequency of the inverter control signal based on the lamp dimming level feedback signal as specified in Claim 1.

Applicant's specification (at Paragraphs 19 and 20) explains the relationship between the dimming level control software and the lamp dimming level feedback signal found in Claim 1. According to Paragraph 19 of Applicant's specification, the lamp dimming level feedback signal is "representative of existing lamp dimming levels and the present invention uses these signals to determine if the lamp is at desired lamp dimming levels." As a result, Paragraph 20 of the specification explains that the dimming control software receives a lamp level feedback signal and causes an adjustment of the frequency when the lamp is not operating at the desired lamp dimming level. This is not shown in Fig. 12 of Vakil.

According to the Office Action, the dimming control circuit in Vakil is microcontroller 42 and points to reference number 64 and reference number 58 in Fig. 12 to show the dimming control signal input and the lamp dimming level feedback signal input, respectively. However, as shown in Fig. 12 and as explained in column 5, lines 5-12 of Vakil, the lamp current feed back signal 58 is received by the VCO control logic 56, not by the microcontroller 42. As explained in column 5, lines 34 – 47, the VCO control logic 56 does not have any software. Instead, the VCO control logic is completely made of hardware (an op-amp configured as an integrator) and does not contain any software. Consequently, the dimming control circuit of Vakil pointed to by the Examiner does not have software causing the dimming control circuit to incrementally modulate the pulse width and frequency

based on *the lamp dimming level feedback signal*. The only component in the circuit shown in Fig. 12 of Vakil that has software is the microprocessor 42. However, microprocessor 42 does not receive the lamp dimming level feedback signal 58 and thus this circuit does not show the limitation of Claim 1.

Fig. 18 of Vakil shows another embodiment of an electronic ballast. This embodiment in Vakil does show the microprocessor 42 as receiving the lamp dimming level feedback signal 58. However, the software in the microprocessor 42 does not incrementally modulate the pulse width and frequency based on the lamp dimming level feedback signal 58. Instead, this software is used to detect fault conditions in the bulb. As explained by the specification of Vakil at column 6, lines 52-56:

> A further data source that may be used by the microcontroller is the signal conditioner that supplies a signal representing lamp current as detected by the current sensor 58. The lamp current signal may be used for detecting bulb conditions such as current overload and filament damage.

As a result, Vakil does not teach the limitations of Claim 1. Consequently, Applicant respectfully requests that the Examiner withdraw the rejection of Claim 1.

Claim 2

The limitations of Claim 2 are not taught by Vakil. Claim 2 as amended requires that the controller circuit and lamp dimming level control software are functional to cause the dimming control circuit to generate the inverter control signal based on the desired dimming level digital data *and the existing lamp dimming level digital data*. (emphasis added) While the microcontroller in Fig. 18

of Vakil does receive the lamp dimming level feedback signal in digital form, as explained above, the signal is used to detect bulb conditions, not to adjust the frequency or pulse width of the inverter. For this additional reason, Applicant respectfully requests that the Examiner withdraw the rejection of Claim 2.

Claims 3-15

Applicant believes that Claims 3-15 contain patentable subject matter. However, Claims 3-15 are dependent on Claim 1. Applicant reserves argument regarding these claims in case further prosecution is necessary.

The rejection of Claims 1-15 under 35 U.S.C. § 102(e) should be withdrawn.

Applicant has commented on some of the distinctions between the cited references and the claims to facilitate a better understanding of the present invention. This discussion is not exhaustive of the facets of the invention, and Applicant hereby reserves the right to present additional distinctions as appropriate. Furthermore, while these remarks may employ shortened, more specific, or variant descriptions of some of the claim language, Applicant respectfully notes that these remarks are not to be used to create implied limitations in the claims and only the actual wording of the claims should be considered against these references.

Pursuant to 37 C.F.R. § 1.136(a), Applicant petitions the Commissioner to extend the time for responding to the October 4, 2007, Office Action for two months from January 4, 2008, to March 4, 2008. Applicant authorizes the Director of the USPTO to charge Deposit Account No. 23-0035 for the extension fee.

The Commissioner is authorized to charge any deficiency or credit any overpayment associated with the filing of this Response to Deposit Account 23-0035.

Respectfully submitted,

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